

Appendix D – Eligibility Criteria for Radiant Barriers, Section RA4.2.1

Radiant barriers shall meet specific eligibility and installation criteria to be modeled by any compliance software and receive energy credit for compliance with the Building Energy Efficiency Standards for low-rise residential buildings.

The emittance of the radiant barrier shall be less than or equal to 0.05 as tested in accordance with ASTM C1371 or ASTM E408.

Installation shall conform to ASTM C1158 (Standard Practice for Installation and Use of Radiant Barrier Systems (RBS) in Building Construction), ASTM C727 (Standard Practice for Installation and Use of Reflective Insulation in Building Constructions), ASTM C1313 (Standard Specification for Sheet Radiant Barriers for Building Construction Applications), and ASTM C1224 (Standard Specification for Reflective Insulation for Building Applications), and the radiant barrier shall be securely installed in a permanent manner with the shiny side facing down toward the interior of the building (ceiling or attic floor). Moreover, radiant barriers shall be installed at the top chords of the roof truss/rafters in any of the following methods:

Draped over the truss/rafter (the top chords) before the upper roof decking is installed.

Spanning between the truss/rafters (top chords) and secured (stapled) to each side.

Secured (stapled) to the bottom surface of the truss/rafter (top chord). A minimum air space shall be maintained between the top surface of the radiant barrier and roof decking of not less than 1.5 inches at the center of the truss/rafter span.

Attached [laminated] directly to the underside of the roof decking. The radiant barrier shall be laminated and perforated by the manufacturer to allow moisture/vapor transfer through the roof deck.

In addition, the radiant barrier shall be installed to cover all gable end walls and other vertical surfaces in the attic.

For Prescriptive Compliance: The attic shall be ventilated to:

Provide a minimum free ventilation area of not less than one square foot of vent area for each 300 ft² of attic floor area.

Provide no less than 30 percent upper vents.

Ridge vents or gable end vents are recommended to achieve the best performance. The material should be cut to allow for full airflow to the venting.

The product shall meet all requirements for California certified insulation materials [radiant barriers] of the Department of Consumer Affairs, Bureau of Home Furnishings and Thermal Insulation, as specified by CCR, Title 24, Part 12, Chapter 12-13, Standards for Insulating Material.

The use of a radiant barrier shall be listed in the Special Features and Modeling Assumptions listings of the Certificate of Compliance and described in detail in the Residential ACM Manual. Conform to the radiant barrier manufacturer's instructions.